

U.S. Patent Application Serial No. 10/562,644  
Response filed December 8, 2006  
Reply to OA dated August 8, 2006

### REMARKS

Claims 1-10, 13 and 15-21 are pending in this application. The present amendment amends claims 1 and 2. Upon entry of this amendment, claims 1-10, 13, and 15-21 will be pending.

The applicant respectfully submits that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated **August 8, 2006**.

Claim 1 has been amended to depend from claim 3. Support for the amendment to claims 1 and 2 may be found on page 5 and on pages 7-8 of the specification, where liquid crystal display elements including compounds of general formula (1) are disclosed.

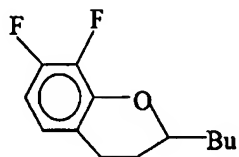
**Claims 1-6, 13 and 15-21 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the liquid crystal compound comprising a core structure of formula (A) with at least one additional ring ( $A^1$  to  $A^4$ ), does not reasonably provide enablement for the compounds with  $a=b=c=d=0$ . (Office Action paragraph no. 1)**

The rejection of claims 1-6, 13 and 15-21 is respectfully traversed, and reconsideration of the rejection is requested.

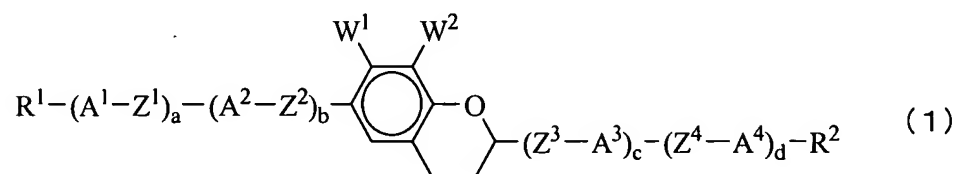
The Examiner refers to formula (A) in claim 1, and to groups  $A^1$  to  $A^4$  and the subscripts in formula (1) in claim 3. The Examiner states that the specification is enabling for formula (A), but then refers to the limitations in claim 3. In the rejection as applied to claim 1, the Examiner appears to be noting that formula (A) is related to formula (1) in claim 3, when  $a=b=c=d=0$ .

In traversing the rejection, Applicant submits that the preparation methods 1-4 on pages 13-21 clearly show how to make the general compounds within the scope of formula (1), even when  $a=b=c=d=0$ . For example, in preparation method 1, all that is necessary would be to use compound (12) on page 13, with  $a=b=0$ , and then compound (14) on page 14, with  $c=d=0$ , as reactants. Those reactants are just as enabled as compounds containing groups  $A^1$  to  $A^4$ , that is, with  $a, b, c$  or  $d = 1$ , which the Examiner considers to be enabled.

For example, in Example 4 of the present specification, 2-butyl-7,8-difluorochroman represented by the following formula:

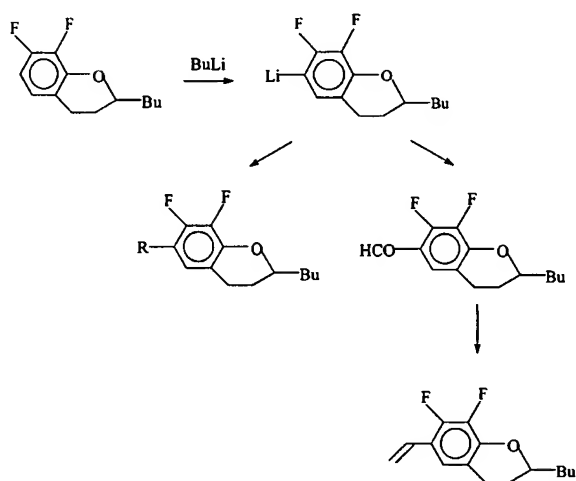


was specifically prepared as an intermediate. The 2-butyl-7,8-difluorochroman corresponds to a compound represented by general formula (1):



(wherein  $a, b, c$ , and  $d$  represent 0,  $R^1$  represents a hydrogen atom, and  $R^2$  represents a butyl group, and  $W^1$  and  $W^2$  represent fluorine).

Moreover, it would be apparent for one skilled in the art that when a substituent is directly introduced into a chroman skeleton through a 7,8-difluorochroman compound, even if the substituent is not a cyclic group, the substituent can be introduced into a chroman skeleton in the same way as that of the cyclic group. The 6-position of the 7,8-difluorochroman compound is influenced by its neighboring fluorine atom and so exhibits a high anionic stability and a high lithiation reactivity. Some processes for directly introducing a substituent that is not a cyclic group into a chroman skeleton via a 7,8-difluorochroman compound are illustrated in the following. These are merely examples:



Thus, it would be apparent for one skilled in the art that the compounds represented by general formula (1) (wherein  $a=b=c=d=0$ ) can be easily prepared from the disclosure of the present

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specification, and the present specification reasonably provides enablement for the compounds represented by general formula (1) (wherein  $a=b=c=d=0$ ).

Reconsideration and withdrawal of the rejection are therefore respectfully requested.

**Claims 3-10, 13, 15 and 17-19 are rejected under 35 U.S.C. 102(a)/(e) as being anticipated by Sugiura et al. (US 2005/0247910 or equivalent EP1,491,612). (Office Action paragraph no. 3)**

The rejection is overcome by the assertion of the claim for foreign priority in this application. Applicant has already made the claim for foreign priority of JP 2003-186941, filed June 30, 2003, and JP2004-070573, filed March 12, 2004. Applicant here perfects the claim for foreign priority with the verified English translations of these applications attached to this Response.

Sugiura et al. '910 was filed on June 23, 2004 and published on November 10, 2005. The present application is a US national stage application of PCT/JP04/09397, filed on June 25, 2004 (which is the effective US filing date). Therefore, Sugiura et al. '910 is prior art under 35 U.S.C. 102 (e) as of its filing date of June 23, 2004, and can be overcome by assertion of Applicant's claim for foreign priority. Applicant notes that EP1,491,612, cited by the Examiner, was published on December 29, 2004, and is **not prior art** for the present application.

In asserting the claim for foreign priority, Applicant submits that claims 3-10, 13, 15 and 17-19 are fully supported by claims 1 to 9 and 11, respectively of priority document JP 2003-186491.

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**Claims 1-2 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US2005/0,247,910 (equivalent EP 1,491,612). (Office Action paragraph no. 5)**

The rejection is overcome by the assertion of the claim for foreign priority, which antedates US2005/0247910, as discussed above. As noted above, EP '612 is not prior art for the present application.

Claims 1, 2, 20 and 21 are supported by the priority documents. Claim 1, as amended, depends from claim 3, for which support in the priority documents has been discussed above. General support for the recitation of the "liquid crystal display element" in claim 1 may be found, for example, in claim 13 of JP'941, as well as in the general disclosure in JP'941 and JP'573. The recited pair of substrates with a liquid crystal composition sandwiched between the substrates, the alignment control layer, the transparent electrode and the polarizing plate, are well known in the art as components of liquid crystal display elements. The recitation of "active matrix" in claim 20 is supported, for example, by paragraph [0002] of JP '941, and the vertical alignment recited in claim 21 is supported, for example, by paragraph [0003] of JP '941.

**It is noted that the filing date of the priority documents is not perfected unless applicant has filed a certified priority document in the application (and an English language translation, if the document is not in English). (Office Action paragraph no. 6)**

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The certified copies of the priority documents were forwarded to the USPTO by the International Bureau, since this is a 371 national stage application, and the Examiner indicates that **these documents have been received by the USPTO** in the Office action summary.

Therefore, the Examiner appears to be referring here only to the verified English language translations of the priority documents. Applicant has here perfected the claim for foreign priority by submitting the verified English translations, as discussed above.

**There is a potential interference with the claims of US2005/0247910 if the present claims are allowed.** (Office Action paragraph no. 7)

The Examiner has not declared an interference, and Applicant takes no action in this regard at this time.

In view of the above, it is submitted that the claims are in condition for allowance. Reconsideration of the rejections is requested. Allowance of claims 1 to 10, 13, and 15 to 21 at an early date is solicited.

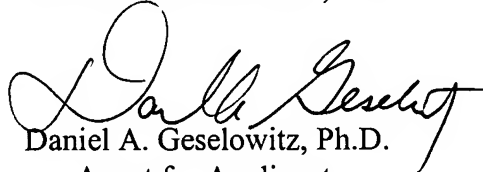
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Verified Translations of JP 2003-186941 and JP2004-070573

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